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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/722,928

11/26/2003

Bonnie B. Sandel

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27267

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11/21/2007

WIGGIN AND DANA LLP  
ATTENTION: PATENT DOCKETING  
ONE CENTURY TOWER, P.O. BOX 1832  
NEW HAVEN, CT 06508-1832

EXAMINER

FRAZIER, BARBARA S

ART UNIT

PAPER NUMBER

4173

MAIL DATE

DELIVERY MODE

11/21/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/722,928	SANDEL ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Barbara Frazier	4173	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 7 and 16-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1 sheet</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of Group I, claims 1-16 in the reply filed on 11/1/07 is acknowledged. The traversal is on the ground(s) that examination of the claims of either group will require a search for reacting or chelating at least a portion of a metal with a water-soluble biocide to form a water-insoluble metal salt of biocide, and the searches required for the two groups of claims are sufficiently interrelated that the Examiner would not be unduly burdened to consider all groups at the same time. This is not found persuasive because separate searches are, in fact, required for either group in view of both their different classification and their recognized divergent subject matter, as well as different fields of searches (for example, searching different classes/subclasses or electronic resources, or employing different search queries). The searches are not so interrelated as to lack undue burden in searching together.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 17-32 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Applicant timely traversed the restriction requirement in the reply filed on 11/1/07.

3. Applicant's election of the species of zinc stearate as the metal, polyethylene as the plastic-forming composition, sodium pyrithione as the biocide, the absence of cellulosic filler, and the absence of reinforcing fibers in the reply filed on 11/1/07 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

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4. Upon examination of the claimed invention, it is noted that the cellulosic filler is found to be an integral part of the plastic structures formed; therefore, the examination has been extended to include the presence of cellulosic filler as recited in claim 15.

5. Claims 7 and 16 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on 11/1/07.

#### *Status of Claims*

6. Claims 7 and 16-32 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species/invention, there being no allowable generic or linking claim.

7. Claims 1-6 and 8-15 are examined.

#### *Information Disclosure Statement*

8. The listing of references in the specification is not a proper information disclosure statement (see page 5, lines 21-22 of the specification). 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 1-6 and 8-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laver, US Patent 5,516,472, Dawson-Andoh et al., Abstract from Vinyltec 2003 Conference, and Lyon et al., US Patent 6,042,877.

Laver discloses an extruded synthetic wood composition, including a process for the production of a composite material comprising the steps of combining cellulosic material with a sufficient amount of thermoplastic material to form a combined product, and extruding the combined product under sufficient conditions to blend the combined product together into a homogenous mixture (see col. 2, lines 47-52). The thermoplastic material may be polyethylene (col. 6, lines 48 – 52), and the composite also contains a lubricant such as zinc stearate (col. 7, lines 18 – 22); polyethylene and zinc stearate are contained in the preferred formulation (col. 7, line 60 – col. 8, line 7). The product is extruded at a temperature between about 100 and 400F (col. 3, lines 20-22); since Applicants have not defined their term “elevated temperature” in the specification, examples, or claims, the term is interpreted to include temperatures between 100 and 400F.

Laver differs from the prior art because the process does not include the step of contacting the extruded product with a water-soluble biocide. However, one skilled in the art would recognize the need to apply a biocidal agent to the product of Laver. As evidence, Dawson-Andoh et al. teach that PVC-wood flour composite materials become colonized and discolored upon exposure to fungi (see abstract). Since Laver teaches that PVC is a functional equivalent of polyethylene (see col. 6, lines 48-52), one skilled in the art would recognize the need for a biocide to be applied to a polyethylene composite material.

Lyon et al. disclose a method for the manufacture of anti-microbial articles comprising rinsing a metal-containing substrate, formed by coating a substrate with an ion/polymer solution, with a potentiator, i.e., an anti-microbial agent (biocide) capable of bonding to the metal ion (col. 4, lines 56-59). For the substrate, Lyon et al. teach that “many types of substrates are suitable for

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use in this invention...substrates are those considered useful in applications where anti-microbial activity is advantageous” (col. 5, lines 37-40). Also, the substrates may comprise any of a variety of natural or synthetic materials; a particularly useful substrate shape is a fiber made of natural and/or synthetic materials, said natural fibers including pulp fibers (col. 5, lines 55-60). Additionally, the substrate may include thermoplastics such as polyethylene (col. 7, lines 32-33). Suitable potentiators include pyrithiones (col. 5, lines 6-7), and sodium pyrithione is preferred (col. 7, lines 27-30 and Preparative Procedure B, column 8).

When considering the need to add a biocide to the product of Laver, one skilled in the art would have been motivated to use the process of Lyon et al., since such process is useful with substrates in applications where anti-microbial activity is advantageous, including substrates with natural fibers and polyethylene (see citations above). Furthermore, one skilled in the art would find the combination of the product of Laver with the process of Lyon et al. advantageous, since the product of Laver already contains the metal zinc as part of the product, and eliminates the need for the coating step recited in Lyon et al. Therefore, it would have been obvious at the time the invention was made to use the process of rinsing a metal-containing substrate with a biocide as recited in Lyon et al. to apply the biocide to the substrate as recited in Laver, in order to arrive at the claimed invention, with a reasonable expectation of success.

Regarding the amount of metal present on the surface of the extruded product (claims 6 and 8), it is noted that Laver is silent with respect to the amount of metal present on the surface of the extruded product. However, the amount of zinc stearate used to make the product of Laver is 3 parts (per 153 parts total; see col. 7, line 66), or approximately 2%, and the claimed invention uses 2.5% zinc stearate (see Example 1, page 17, line 19 of the specification). It

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appears that the amount of zinc in Laver would produce a product having an amount of metal present on the surface within the ranges claimed in claims 6 and 8, and/or one skilled in the art would be able to select such an amount of zinc as a matter of routine experimentation. It would have been obvious to determine workable and/or optimal amounts of metal present on the surface per the reasoning of well-established precedent, such as In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). (Holding that “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” )

Regarding the water solubility of the water-insoluble metal biocide (claims 9 –11), it is noted that the property of water solubility is inherent within the compound itself; therefore, the water solubility of the zinc pyrithione of Lyon et al. would necessarily have the same water solubility of the zinc pyrithione of the claimed invention.

Regarding the surface concentration of the water-insoluble metal biocide (claim 12), it is noted that Lyon et al. is silent with respect to the surface concentration of zinc pyrithione. However, the claimed invention uses 0.2 – 2% sodium pyrithione (Example 1, pages 17 and 18 of the specification), and Lyon et al. uses a sodium pyrithione solution adjusted to a pyrithione concentration of 3000 ppm (Preparative Procedure B, column 8), or 0.3%. It appears that the amount of sodium pyrithione in Lyon et al. would produce a product having a surface concentration within the range claimed in claim 12, and/or one skilled in the art would be able to select such an amount of sodium pyrithione as a matter of routine experimentation. It would have been obvious to determine workable and/or optimal amounts of water-insoluble metal biocide per the reasoning of well-established precedent, such as In re Aller, 220 F.2d 454, 456,



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105 USPQ 233, 235 (CCPA 1955). (Holding that “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” )

It is noted that *In re Best* (195 USPQ 430) and *In re Fitzgerald* (205 USPQ 594) discuss the support of rejections wherein the prior art discloses subject matter which there is reason to believe inherently includes limitations that are newly cited or is identical to a product instantly claimed. In such a situation the burden is shifted to the applicants to "prove that subject matter shown to be in the prior art does not possess characteristic relied on" (205 USPQ 594, second column, first full paragraph). As a practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art products and make physical comparisons therewith. *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara Frazier whose telephone number is (571)270-3496. The examiner can normally be reached on Monday-Thursday 8am-4pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel can be reached on (571)272-0718, or Cecilia Tsang can be reached on (571)272-0562. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BSF

/Cecilia Tsang/  
Supervisory Patent Examiner, Art Unit 4137